

WHITE FEAR, DEHUMANIZATION AND LOW EMPATHY:  
A LETHAL COMBINATION FOR SHOOTING BIASES

BY

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THESIS

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## Abstract

The question of why some individuals are racially prejudiced is one that has peaked the interests of psychologists for many years (Allport 1954; Bell, 1978; Tajfel & Turner, 1981). To answer this complex question, scientists have had to adjust their definitions of prejudice to accommodate the changing nature of racial discrimination from more explicit, blatant racism to more implicit, subtle forms of racism (Cunningham, Preacher, & Banaji, 2001; Correll, Park, Judd, & Wittenbrink, 2002; McConahay, 1986). Even in the absence of explicitly prejudicial attitudes or policies, discrimination exists for racial/ethnic minorities in multiple domains such as hiring decisions, police stops, and jury selection (Carter & Mazur, 2013; Nier, Gaertner, Nier, C. & Dovidio, 2012; Pager & Western, 2012). One area where this presumably unintentional discrimination is especially important is accidental shootings. In general, these shootings exemplify modern racism in that they show a behavior that is clearly disproportionately affecting members of minority groups; however, these incidents presumably occur without conscious awareness of stereotypes and discriminatory attitudes. Given recent high-profile cases of unarmed Black individuals being shot in the past decade (e.g. Trayvon Martin, Jonathan Ferrell, Oscar Grant), a growing number of studies have been conducted to investigate shooter biases. The main goals of the current study were to investigate (1) whether individual differences in affective (i.e., White fear) and implicit attitudes (i.e., dehumanization) play a role in White participants' decisions to shoot racial ethnic minorities in a shooting simulation task and (2) whether empathy (i.e., empathic concern and perspective taking) moderated those relations. Two hundred seven White undergraduate students completed two tasks assessing shooting bias and dehumanization and two questionnaires assessing White fear of racial minorities and empathic

abilities. The results of this study suggested that participants who reported fearing racial minorities and had low self-reported perspective taking had a significantly lower (i.e., more liberal) shooting threshold for Black and Asian targets relative to White targets. Similarly, participants who scored high on dehumanization and had low self-reported empathic concern also had a significantly lower shooting threshold for racial minority targets relative to White targets. Taken together, the results of this study suggested that there may be two pathways that affect individual differences in shooting bias; White fear and low perspective taking, and dehumanization and low empathic concern, respectively. Under such conditions, both pathways predicted low shooting threshold for racial minority targets, but perspective-taking and empathic concern, respectively, protected individuals from the negative consequences of those attitudes. The implications of these findings are discussed.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Background

The question of why some individuals are racially prejudiced is one that has peaked the interests of psychologists for many years (Alport 1954; Bell, 1978; Tajfel & Forgas, 1981). To answer this complex question, scientists have had to adjust their definitions of prejudice to accommodate the changing nature of racial discrimination from more explicit, blatant racism to more implicit, subtle forms of racism, including unintentional racism, referred to as modern racism (Cunningham, Preacher, & Banaji, 2001; Correll, Park, Judd, & Wittenbrink, 2002; McConahay, 1986). Even in the absence of explicitly prejudicial attitudes or policies, discrimination exists for racial/ethnic minorities in multiple domains (e.g., hiring decisions, police stops; jury selection; Carter & Mazzula, 2013; Nier, Gaertner, Nier, C. & Dovidio, 2012; Pager & Western, 2012). One area where this presumably unintentional racism has had detrimental consequence is homicide due to accidental shootings. Though there is no recent official data publicly available on race of victims, historically there has been a disproportionate number of unarmed Black men killed by law enforcement officials (Binder & Scharf, 1982; Department of Justice, 2001). Additionally, recent reports have found that when Whites shoot Blacks, the death is more likely to be ruled as justifiable compared to when Blacks shoot Whites (Roman, 2013). In general, these shootings exemplify modern racism in that they show a behavior that is clearly disproportionately affecting members of minority groups; however, these incidents presumably occur without conscious awareness of stereotypes and discriminatory attitudes. Given recent high-profile cases of unarmed Black individuals being shot in the past

decade (e.g. Trayvon Martin, Jonathon Ferrell, Oscar Grant), a growing number of studies have been conducted to investigate shooter biases. Such investigations are crucial for understanding risk factors that produce low shooting threshold (i.e., potentially increased likelihood of shooting unarmed racial and ethnic minority members). The goal of this study was to integrate knowledge of racial attitudes (i.e., White fear and dehumanization) and affect (i.e., empathic ability) to propose a model of individual differences that increase White individuals risks for low shooting thresholds.

### 1.1.1 Shooting Task

In 2002, Correll et al. designed a novel laboratory task to examine whether there were biases in shooting decisions based on race. In this task, participants were shown images of Blacks and White targets either holding a gun or a neutral object (e.g., cell phone) and given less than a second to respond whether or not they should “shoot” or “not shoot” the target by pressing one of two buttons. Data from this task have been analyzed in a number of ways. One way has been to compare the reaction time for correct trials. Results from these analyses have generally found that participants are quicker to decide to shoot armed Blacks (relative to armed Whites; Correll et al., 2002; 2007; Park, Glaser and Knowles, 2008; Sadler, Correll, Park, & Judd, 2012; though see Taylor, 2011; Harmer, 2012 for null results). These results are interpreted as being consistent with a racial bias because it is assumed that White participants have an implicit association between Blacks having weapons; thus, they are faster to decide to shoot. Other studies have looked at the number of errors committed. These studies have found that White participants tend to make more errors for unarmed Black targets than for unarmed White

participants (Correll et al 2002; 2011; Plan & Purche 2005; Plant et al 2005). However, one limitation to this type of analysis is that it ignores correct trials. Participants who make a large amount of errors may have a tendency to respond with the decision to shoot (i.e., they may have a bias to respond). Hence, some researchers have used signal detection theory to understand racial biases in shooting decisions.

Signal detection theory focuses on hits (shooting when there is a gun) and false alarms (shooting when there is no gun; Green & Swets, 1966). This theory is primarily used when the task involves categorization of ambiguous stimuli, which can occur as a result of known process (the signal) or by chance (noise). The goal is to estimate two parameters that incorporate these processes, based on the figure below. The  $d'$  parameter indicates the strength of the signal (racial bias) relative to noise. It is calculated by comparing the ratio of hits to false alarms, known as sensitivity. A larger  $d'$  indicates a higher degree of hits compared to false alarms, which is taken to suggest higher specificity in response. A participant who has a larger  $d'$  for Black targets compared to White targets, for example, displays a greater sensitivity in decision making, meaning their rate of hits to false alarms is higher. Previous research has generally not found differences in the  $d'$  for Black and White targets (e.g., Correll et al., 2002, 2007). The  $C$  parameter represents the decision threshold of the participant (i.e., how conservative or liberal their decisions are). This is calculated relative to an ideal observer, who would theoretically minimize the occurrence of misses and false alarms. Thus the value of  $C$  is calculated as the distance from the ideal observer. A value of "0" indicates an ideal observer, whereas a negative value indicates a more liberal threshold (making a correct decision to shoot more than the ideal observer) and a positive value indicates a more conservative threshold (making a decision to shoot less than the ideal observer). Research has generally found that White participants have a

lower (more liberal) threshold for Black than for White targets (Correll et al., 2002; Correll et al., 2007; Correll, Wittenbrink, Park, Judd, & Goyle, 2011; Plant & Peruche, 2005; though see Correll et al., 2007; Harmer, 2012; Hunsinger, 2010; Taylor, 2011 for null results). In comparison to other parameters, shooting threshold may be especially useful in quantifying participants' willingness to shoot. Even though the results of the shooting task have been replicated, some studies have failed to replicate the results. Moreover, some studies have actually found a shooter bias that favors White targets (Harmer, 2012; Taylor, 2011). In trying to understand these inconsistent results, it may be important to look at key individual differences derived from theory that might moderate shooting decisions.

*Figure 1.* Shooting task decisions used in signal detection theory

<b>Reality</b>	<b>Decision</b>	
	Shoot	Don't Shoot
Gun	<i>Hit</i>	<i>Miss</i>
No Gun	<i>False alarm</i>	<i>Correct rejection</i>

### 1.1.2 Individual Differences

Given that racial shooter biases have been identified in some studies, it is reasonable to assume that an individual's awareness of cultural stereotypes or level of racial prejudice may moderate this effect. The research on whether awareness of racial stereotypes matters in shooting decisions is mixed (Correll et al., 2002; Kenworthy, Barden & Diamond, 2011). Similarly, endorsing prejudice, including modern racism, appears to contribute to shooting biases in some studies (Sadler et al., 2012), but not others (Correll et al., 2002; Watt, 2010; Park et al., 2008;



Taylor, 2011). One reason for the inconsistent findings is the use of broad measures of racial attitudes that conflate multiple constructs. It may be that more specific attitudes about Blacks may moderate the shooter bias. For example, holding the attitude or being aware of the stereotype that Blacks excel as athletes may not affect shooting decisions, whereas holding the attitude that Blacks are dangerous and a group to fear may affect shooting decisions, in that people maybe more likely to mistakenly shoot members of groups they fear.

Moreover, given the relatively short response time used to make a shooting decision, it is likely that these processes are highly automatic and thus, likely to be strongly influenced by emotion (cf. Metcafe & Mischel, 1999). Thus far, there has been some support for the role of certain emotions in shooting decisions. For example, Baumann & Desteno (2010) found that participants who experienced experimentally manipulated anger were more likely to mistake neutral objects for a gun. They also had a lower threshold for deciding to shoot targets (though in this study, race was held constant). Another study found that the experience of fear reduced the shooting threshold for Black targets among women (but not men; Hunsinger, 2010). In a similar vein, Correll, Wittenbrink, Park, Judd, and Goyle (2011) found that manipulating the dangerousness of Blacks by reading an article about a Black person committing a crime increased the shooting bias (in terms of shooting threshold) relative to reading an article about a White person committing a crime. Thus, these studies show that emotions play a role in shooting decisions. Attitudes that are emotionally laden, then, may be especially important to consider.

Relatively fewer studies have looked at individual differences in emotionally laden attitudes. In one study, Miller, Zielaskowski and Plant (2012) found a relation between chronic beliefs about interpersonal threat and likelihood of mistakenly shooting racial out-group members. These findings also extended beyond race-based stereotypes of out-groups, in that

interpersonal threat also increased the likelihood of incorrectly shooting members of an out-group that does not have a stereotype of dangerousness (e.g., Asians). Individual differences in concerns about threat, then, may lead an individual to have a more liberal shooting threshold. Given stereotypes about racial groups, it is possible that concerns about interpersonal threat or threat in general may be racially-based. In other words, participants' concerns about threat may be tied to a specific race (i.e., particular fear of racial minorities).

Indeed, some theories of racial discrimination propose that part of racism has to do with an irrational fear and perceived dangerousness of racial minorities. In an exploration of the psychological costs of racism to White individuals, Spanierman and Heppner (2004) found that White fear was positively associated with racial discrimination such that the more White students expressed a fear of racial minorities, the more likely they were to hold negative attitudes about them. One consequence of this fear could be a heightened sense of interpersonal threat. It is likely then, that beliefs about interpersonal threat – which have been found to predict shooting biases – that are specific to a racial group (i.e., perceived threat or fear of a particular group) may predict more shooting biases. Specifically measuring fear of racial minorities can elucidate how race-specific threat may predict shooting biases better than global prejudicial attitudes. This isolates a specific facet of emotionally laden prejudicial attitudes that may be relevant to shooting decisions.

Another mechanism that may explain racial biases in shooting decisions is dehumanization. Dehumanization, conceptualized as the denial of humanness, has long been theorized to play a role to legitimize the commitment of violent acts. By denying the humanity of a group, it may become more psychologically acceptable to cause that group harm. An early study found that dehumanization-prone children were less likely to experience guilt or remorse

after engaging in aggressive behavior (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Later studies on implications of this for racial groups found that dehumanization was linked to decreased empathy toward racial and ethnic minorities and diminished support for reparation policies, such as affirmative action (Čehajić, Brown, & González, 2009; Zebel, Zimmermann, Tendayi Viki, & Doosje, 2008). Further, in a laboratory study, dehumanization was linked to a heightened endorsement of violence against Blacks, though a behavioral measure of aggression was not included (Goff, Eberhardt, Williams, & Jackson, 2008). Other studies of dehumanization of women have found a positive relation between dehumanization and a willingness to condone sexual violence toward women (Rudman and Mescher, 2012).

Multiple measures were developed to assess dehumanization. Given that assessing dehumanization may be especially susceptible to social desirability concerns as well as potential lack of insight, it is often assessed using tasks with deliberately low face validity. In some studies, researchers have found that people tend to reserve uniquely human characteristics or emotions to their own group (Castano & Giner-Sorolla, 2006). Assessing dehumanization in this way assumes that both animals and humans can experience non-uniquely human emotions like fear (primary emotion), but only humans can experience unique processes such as apprehension (secondary emotion). Other studies utilize implicit tasks, where the associations of human and non-human words to one's in-group are compared to associations of those same words with out-groups (Gaunt, Leyens, & Demoulin, 2002; Castano & Giner-Sorolla, 2006; Paladino et al., 2002). Relevant to the current study, previous research has found an implicit association between Blacks and animals (Goff, Eberhart, Williams, & Jackson, 2008). Thus far, numerous studies have highlighted how dehumanization may play a role in attitudes toward and propensity for violence toward out-groups, but not actually engaging in violence. Conceptualizing shooting bias

tasks as a proxy for aggressive behavior towards racial minority targets allows us to test the hypothesis that dehumanization of racial minorities may play a role in shooting decisions. We are then able to test how implicit dehumanization may translate to behavior toward minorities. Similar to how White fear functions, dehumanization may increase the justification to shoot racial minorities relatively liberally – that is, have a lower shooting threshold for racial minorities compared to Whites.

### 1.1.3. Protective Role of Empathy

One factor that may attenuate the association between fear and dehumanization of racial minorities might be empathic ability. Empathy is a multifaceted construct, often defined in terms two components; cognitive empathy, the ability to take the perspective of others, and affective empathy, the ability to experience the emotion of others (Davis, 1980; Decety & Jackson, 2004). Empathy may reduce fear by allowing people to see similarities between their groups (Stephan & Finlay, 1999). Interestingly, Richardson, Hammock, Smith, Gardner, and Signo (1994) found that perspective-taking was an effective inhibitor of aggressive behavior in low-threat contexts. In other words, when perceived threat was high, empathy did not inhibit aggressive behavior. Thus, perspective-taking may protect people from engaging in aggressive behavior when their perceived threat of the target is low. It is unclear whether this protective effect will generalize to individual differences in fear of minorities (i.e., not just general manipulated threat). Empathy can also be protective from engaging in dehumanization. For example, if I am able to perceive that a member of a racial out-group experiences an emotional event the way I do, then it is possible that I would be less likely to perceive them as being less human. This assumption is

actually the basis of tasks that use uniquely-human emotions and characteristics to assess dehumanization. The ability to take the perspective of others and see a shared humanity across racial lines may then reduce the fear towards and perceived threat of racial minorities.

The importance of empathy in understanding race and racial attitudes has been underscored in many studies. Bäckström and Björklund (2007) found that empathic ability predicted prejudice above and beyond social dominance orientation and right wing authoritarianism, two other factors commonly related to prejudice. Further, numerous studies have documented the existence of a racial empathy gap, where in-group members tend to reserve empathic reactions and concerns to their own racial group (Eres & Molenberghs, 2012; Gutsell & Inzlicht, 2012; Trawalter, Hoffman, & Waytz, 2012), potentially due to an inability to take the perspective of out-group members.

Conversely, one of the proposed mechanisms of inter-group contact, an effective method of reducing prejudicial attitudes, is that it forces individuals to take a perspective other than their own (for a review, see Pettigrew & Tropp, 2008). Numerous studies have documented how increasing empathy reduces prejudiced attitudes in White samples (Aron et al., 2004; Vescio, Sechrist, & Paolucci, 2003). Thus, it is possible that for individuals low in empathic ability, the link between fear of Blacks and/or the tendency to dehumanize Blacks and shooting bias could be stronger than for individuals average or high in empathic ability. It is also possible that for individuals high in empathic ability, the link between fear of Blacks and shooting bias could be weak or not significant. Similarly, it is possible that empathic ability would play a similar role for the link between dehumanization and shooting bias. Hence, whereas low empathy may facilitate the link between fear/dehumanization and shooter biases, high empathy may attenuate the same link.

The current study had two goals. First, we tested whether empathic ability moderated the relation between shooting biases and White fear. Second, we explored whether empathic ability attenuated the relation between shooting biases and dehumanization. The majority of studies have only included Black targets as a racial out-group, though recent research suggests that this shooting biases may extend across other racial groups (Millet et al., 2012). We therefore chose to include both Black and Asian targets in order to better capture whether these biases are only applicable to groups stereotyped as being dangerous or whether they are applicable to other racial out-groups.

### Hypotheses

1. We predicted that empathy (perspective taking and empathic concern) would moderate the relation between White fear and shooting biases. Specifically, we predicted that high White fear and low empathy (both perspective taking and empathic concern) would predict the most “lethal” outcome (i.e. liberal threshold for racial minorities compared to Whites). Given mixed findings regarding shooting biases toward various racial groups, we did not have specific hypotheses about whether shooting biases would differ for Black versus Asian targets.
2. We also predicted that empathy (perspective taking and empathic concern) would moderate the relation between dehumanization and shooting biases. Similar to the first hypothesis, we predicted that high dehumanization and low empathy (both perspective taking and empathic concern) would predict the most liberal shooting threshold for Black targets compared to White and Asian targets. The dehumanization task is designed to

assess dehumanization of Blacks relative to Whites, hence the more specific race prediction for this hypothesis.

## CHAPTER 2

### METHODOLOGY

#### 2.1 Participants and Design

Participants were 217 White undergraduate students recruited at a large suburban university in the Midwest. Participants received course credit for participation. Due to high error rates on the shooting task (greater than 50%; i.e., lower than chance), 16 participants were removed from the analyses, leaving a remainder of 201 participants (123 women, 2 transgender) with a mean age of 19.04 ( $SD = 1.14$ ).

#### 2.2 Materials

*White Fear.* To assess fear of racial minorities, participants completed the White Fear subscale of the Psychosocial Costs of Racism to Whites questionnaire (PCRW; Spanierman & Heppner, 2004). This sub-scale consists of five items which participants rated on a Likert-type scale ( $1 = strongly agree$ ,  $6 = strong disagree$ ) such as, “I often find myself fearful of people of other races.” A higher score indicated increased fear of racial minorities. Reliability was comparable to other studies where this measure was included ( $\alpha = .69$ ; Spanierman & Heppner, 2004; Spanierman, Poteat, Beer & Armstrong, 2006).

*Dehumanization.* We adapted an Animal Implicit Association Test (A-IAT; as developed by Rudman & Mescher, 2012) to assess implicit dehumanization of Blacks. In this task participants categorized 12 names words representing stereotypical White and Black names



(Greenwald, McGhee, & Schwartz, 1998) and 10 words characteristic of either animals (animals, nature, instinct, physical, bodies) or humans (culture, society, mind, symbols, monuments). The instructions were:

For each of several sorting tasks you will be shown words one at a time in the middle of the computer screen. Your task is to sort each item into its correct category as fast as you can by pressing EITHER the 'left shift' key "or the 'right shift' key. Press the 'left shift' key using your left index finger or the 'right shift' key using your right index finger. The categories associated with the 'left shift' and 'right shift' keys will be shown at the top of each screen. Please pay close attention to these category labels-- they change for each sorting task! For one of the sorting tasks, you will be classifying names as being either 'Black' or 'White'. In the other sorting task, you will be classifying words as being either 'Nature' or 'Culture'. For each task, please judge each item on the basis of which group it appears to belong to.

Following the recommendations of Greenwald, Nosek, and Banaji (2003), there were a total of seven blocks. First, participants completed a block of 20 trials categorizing the names. Second, participants completed a block of 20 trials categorizing nature/culture words. Third, there was a block of 20 trials with names and nature/culture words mixed. Fourth, there was a block of 40 trials with names and nature/culture words mixed. Fifth, there was another block with names; however, in this block the side (left/right) of the responses was opposite from the first block. The last two blocks then were a mix of names and nature/culture words mixed with the opposite pairing. The side that Black and White names started was counterbalanced across

participants. The task was scored following Greenwald et al. (2003), which consisted of subtracting the reaction time from the block pairing White names with animal words from the block pairing Black names and animal words. This difference was then divided by the within-subject standard deviation to create a *D* score for each participant, such that negative values indicate a tendency to dehumanize Blacks (i.e., faster to pair Black names and animal words compared to White names and animal words).

*Empathy.* To assess self-reported trait empathic ability, participants completed the Interpersonal Reactivity Index (IRI; Davis, 1980). This measure consists of 28 items which participants rated on a Likert-type scale (*1 = doesn't describe me at all, 5 = describes me very well*). The IRI is comprised of four subscales (a) Fantasy proneness (seven items; e.g. “I daydreams and fantasize, with some regularity, about things that might happen to me”); (b) Empathic Concern (seven items; e.g. “I would describe myself as a pretty softhearted person”); (c) Personal Distress (seven items, e.g. “In emergency situations, I feel apprehensive and ill-at-ease”); and (d) Perspective-taking (seven items; e.g. “I sometimes find it difficult to see things from the other guys' point of view”). In this measure, a higher score indicates greater self-reported empathic ability. Given our a priori interests, we focused on empathic concern ( $\alpha = .79$ ) and perspective taking ( $\alpha = .76$ ), which were moderately correlated ( $r = .41, p < .001$ ; reliabilities similar to other studies using this measure, such as Cliffordson, 2001; Loudin, Loukas, & Robinson, 2003). However, follow-up analyses using the other subscales as covariates did not affect the results reported below. The IRI has been shown to predict future empathic behavior (Hojat, Mangione, Nasca, Gonnella, & Magee, 2005).

*Shooting bias.* Shooting biases were measured using a computer simulation program that was designed using DMDX software largely based on Plant, Peruche and Butz's (2005) design.

The computer program instructed participants:

Police officers and some military personnel are often put into positions where they have to quickly decide whether a suspect is carrying a weapon and whether or not they should shoot them. This next task will simulate a similar situation.

Pictures of people with objects will appear at various positions on the screen. Some of the pictures will have a face of a person and a gun. These people are the criminals, and you are supposed to '*shoot*' at these people. Some of the pictures will have a face of a person and some other object (e.g., a soda). These people are not the criminals and you should '*not shoot*' at them.

Press the 1 key using your left index finger to '*shoot*'. Press the 9 key using your right index finger to '*not shoot*'. Before starting the task, you will get some practice. You will have a very limited amount of time to respond (less than a second). It's very important that you respond as quickly and accurately as possible.

The task utilized digital color photographs of 5 Black, 5 White and 5 Asian males selected from a set of slides (FERET Database; Phillips, Wechsler, Huang, & Rauss, 1998) that had been matched for age and attractiveness. Each picture was modified twice: once adding with either one of two guns (black revolver or silver pistol) and once adding a soda can (blue or silver). This resulted in a total of 60 images of 6 types, Black face with a gun, Black face with a

soda can, White face with a gun, White face with a soda can, Asian face with a gun and Asian face with a soda can. The program randomly selected one of these 60 images. The objects appeared on random sides of each face, therefore ensuring that participants had to scan the face before responding. Each participant was given 1000 milliseconds to respond. If they did not respond within the time limit, a message appeared in white font saying “Please try to respond faster.” If they made an error, a message appeared in white font saying “ERROR”. Each participant completed 20 practice trials and then 180 trials (3 sets of 60) each.

Consistent with previous studies (Correll et al., 2002; 2007), we used signal detection theory for our dependent measure. We focused on the shooting threshold (C) parameter given results from previous studies (e.g., Correll et al., 2002).

### 2.3 Procedure

Participants were recruited from the department’s subject pool. Participants signed up for the study according to schedule availability. This study was among one of many that participants could engage in exchange for course credit (the study was labeled “Study 2” therefore no prior information was given about the nature of the study). Upon entering the lab, participants were provided with a brief description of the study and informed that they may stop participation at any time. They were informed that they would complete two reaction time tasks followed by a series of questionnaires.

All the participants completed the dehumanization and shooting tasks before the questionnaires, but the order of the tasks was counterbalanced. In other words, half the participants completed the dehumanization task first followed by the shooter task. We did not

find significant differences between order of the tasks on the outcome variable. Participants were told to try their best to complete the tasks as quickly and accurately as they can. Following the tasks participants completed a questionnaire packet containing a demographic sheet, Psychosocial Costs of Racism to Whites (PCRW) and the Interpersonal Reactivity Index (IRI). No further instructions or feedback about their performance on the task were given. After completing the study, participants were fully debriefed by the experimenter and asked if they experienced any discomfort during the study. Some participants reported that the shooting task was too fast which was frustrating, but otherwise did not report discomfort.

## CHAPTER 3

### RESULTS

#### 3.1 Hypothesis 1: Shooting threshold, White fear, and empathy

We used the general linear model (GLM) to test the prediction that empathy (i.e., empathic concerns and perspective taking) would moderate the relation between White fear and shooting threshold for out-group targets. Race of the target (i.e., Black, Asian and White) was included as a within-subject factor and White fear, empathic concerns, and perspective taking (mean-centered; Delaney & Maxwell, 1981) were included as between-subjects factors. We found a main effect for target race,  $F(2, 382) = 3.48, p = .032$ . None of the other main effects were significant ( $p$ 's ranged from .640-.984). None of the two-way interactions were significant ( $p$ 's ranged from .214-.914). Finally, partially consistent with our prediction, the White fear X target race X perspective taking interaction was significant,  $F(2, 378) = 3.54, p = .030$ , though the White fear X target race X empathic concern was not,  $F(2, 378) = .87, p = .421$ .

We followed up the main effect of race by conducting pairwise  $t$ -tests. Though the shooting threshold was lower (more liberal) for Black targets ( $M = -0.02, SD = .20$ ) than for White targets ( $M = .01, SD = .22$ ), consistent with previous studies (Correll et al., 2002), this difference did not reach statistical significance,  $t(194) = -1.33, p = .185, d = -.12$ . There was a marginal, but not statistically significant, difference between Black targets and Asian targets ( $M = -.05, SD = .21$ ), such that participants demonstrated a lower shooting threshold for Asian targets,  $t(194) = 1.75, p = .081, d = .16$ . Finally, there was a statistically significant difference in shooting threshold when comparing Asian targets to White targets, such that participants had a

lower shooting threshold for Asian targets,  $t(195) = -3.16, p = .002, d = -.21$ . These data suggested that participants had the highest shooting threshold for White targets, but differences in shooting threshold were only statistically significant when White targets were compared to Asian targets.

To follow up the significant three-way interaction, we plotted estimated means based on regression output (Aiken & West, 1991; see Figures 2 and 3). To conduct the follow up tests, we performed a series of multiple regressions with the predictors (and their interaction) altered to reflect low ( $-1\ SD$ ) and high ( $+1\ SD$ ) levels of perspective-taking and White fear (cf. Robinson, 2007). The dependent variable in these regressions was a difference score to reflect the within-subject shooting threshold of target race (Judd, Kenny, & McClelland, 2001). In these analyses, the significance of the intercept reflected the significance of the conditional effect of target race at the level of the two continuous predictors (e.g., high white fear and low perspective-taking) (Aiken & West, 1991).

We found that at high levels of white fear and low levels of perspective taking, participants had a significantly lower (more liberal) threshold for Black targets ( $M = -.05$ ) relative to White targets ( $M = .08$ ),  $t(191) = -3.93, p < .001, d = -.61$ . At these levels of perspective taking and White fear, we also found a significantly lower threshold for Asian targets ( $M = -.07$ ) relative to White targets,  $t(191) = -2.53, p = .012, d = -.71$  but not relative to Black targets,  $p = .353, d = .09$ . These results suggest that individuals who score high on White Fear and low on perspective taking had a more liberal threshold for shooting racial out-group members (Black and Asian targets) relative to shooting in-group members (White targets).

Similarly, low White fear and low-perspective taking, individuals also showed a significantly lower shooting threshold towards Asians ( $M = -.05$ ) relative to White targets ( $M = .001$ ),  $t(191) =$

-2.53,  $p = .012$ ,  $d = -.22$ . There were no other differences at this level,  $p > .167$ . These results suggest that low White fear may be associated with a more liberal shooting threshold for Asian targets, but not Black targets relative to White targets.

Interestingly, at high levels of White fear and high levels of perspective taking, participants had a marginally higher shooting threshold (more conservative) for Black targets ( $M = .02$ ) relative to White targets ( $M = .01$ ),  $t(191) = 1.73$ ,  $p = .085$ ,  $d = .26$ . These participants did not differ in shooting threshold when comparing Asian to White targets,  $p = .728$  or Black to Asians targets,  $p = .179$ . Finally, at low levels of White fear and high levels of perspective taking, participants did not differ in shooting thresholds across target race,  $p > .156$ . This data suggested that the three-way (White fear X perspective taking X target race) interaction is primarily driven by high White fear, low perspective taking individuals differing in shooting thresholds for racial out-group members. Said a different way, high White fear and low perspective taking predicted liberal shooting thresholds for Black and Asian targets relative to White targets.

### 3.2 Hypothesis 2: Shooting threshold, dehumanization, and empathy

Similar to the procedures stated above, we used the GLM to test the prediction that empathy would moderate the relation between dehumanization and shooting threshold for out-group targets. Race of the target (Black, Asian and White) was included as a within-subject factor, and dehumanization and empathic concern and perspective taking were included as between-subjects factors. Aside from target race, none of the main effects were significant ( $p$ 's ranged from .584 - .980). Only two of the two-way interactions were significant; dehumanization X target race and



perspective taking X target race. However, these interactions were further qualified by a statistically significant dehumanization X empathic concern X target race interaction,  $F(2, 372) = 3.99, p = .019$ , though the dehumanization X perspective-taking X target race was not significant,  $F(2, 372) = 1.94, p = .145$ .

To follow up the significant three-way interaction, we followed the same steps as above. Similar to the results with White fear and perspective taking, we found that at high levels of dehumanization and low levels of empathic concern, participants had a significantly lower (more liberal) shooting threshold for Black targets ( $M = -.03$ ) relative to White targets ( $M = .07$ ),  $t(191) = -2.29, p = .023, d = -.47$  (see Figures 4 and 5). At these levels of dehumanization and empathic concern, we also found a marginally significant lower threshold for Asian targets ( $M = -.05$ ) relative to White targets,  $t(191) = -1.8, p = .074, d = -.57$ , but not relative to Black targets,  $p = .590, d = .09$ . These data suggested that individuals who score high on dehumanization and low on empathic concern have a more liberal shooting threshold for racial out-groups (i.e., Black and Asian targets) relative to in-group members (White targets).

Interestingly, low dehumanization and low empathic concern individuals also showed a significantly lower shooting threshold for Asian ( $M = -.07$ ) relative to White targets ( $M = -.01$ ),  $t(191) = -3.09, p < .01, d = -.49$  and Black targets  $t(191) = 2.51, p = .01, d = -.29$ . There were no other differences at this level,  $p > .54$ . These data suggested that low dehumanization, coupled with low empathic concerns, may be associated with a more liberal shooting threshold for Asian targets, but not for Black targets or White targets.

At low levels of dehumanization and high levels of empathic concern, participants did not differ in shooting threshold between Black and White targets,  $p = .50$ . Compared to Asian targets ( $M = -.09$ ), however, individuals had a significantly higher shooting threshold for Black targets

( $M = .02$ ),  $t(191) = 2.64$ ,  $p < .01$ ,  $d = -.52$ , as well as White targets ( $M = .004$ ),  $t(191) = -1.92$ ,  $p = .05$ ,  $d = -.44$ . Finally, at high levels of dehumanization and high levels of empathic concern, participants did not differ in shooting thresholds across target race,  $p$ 's  $> .25$ . These data suggested that the three-way (dehumanization X empathic concern X target race) interaction is primarily driven by the high dehumanization, low empathic concern individuals differing in shooting thresholds for racial out-groups. Said a different way, high dehumanization and low empathic concerns predicted liberal shooting thresholds for Black and Asian targets relative to White targets.

Figure 2. Shooting threshold by target race for low perspective-taking participants

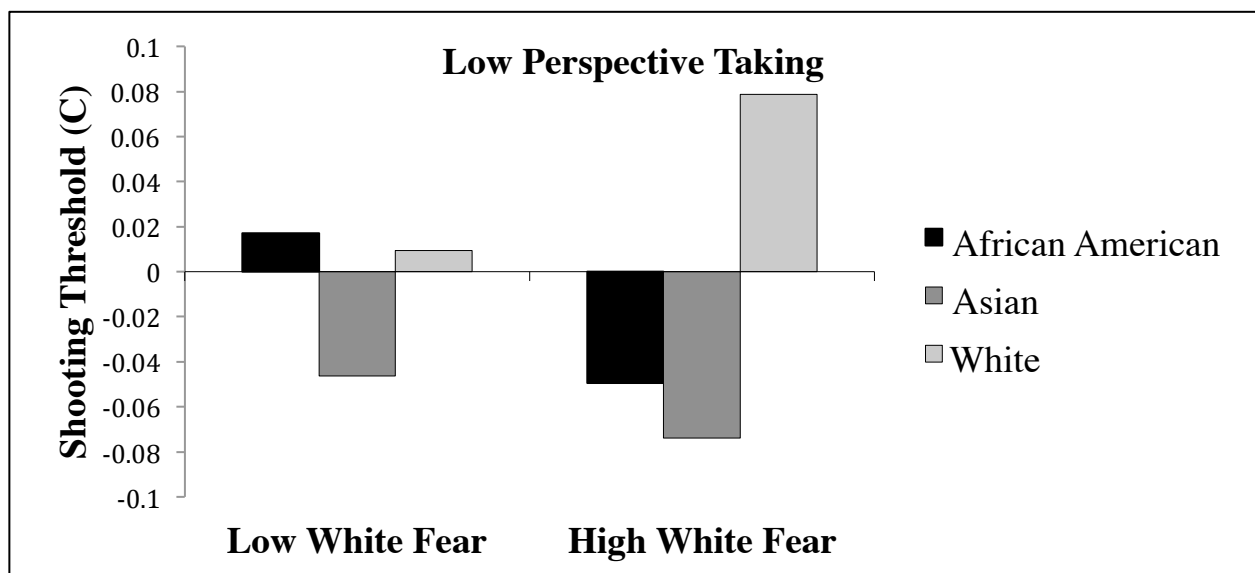


Figure 3. Shooting threshold by target race for high perspective-taking participants

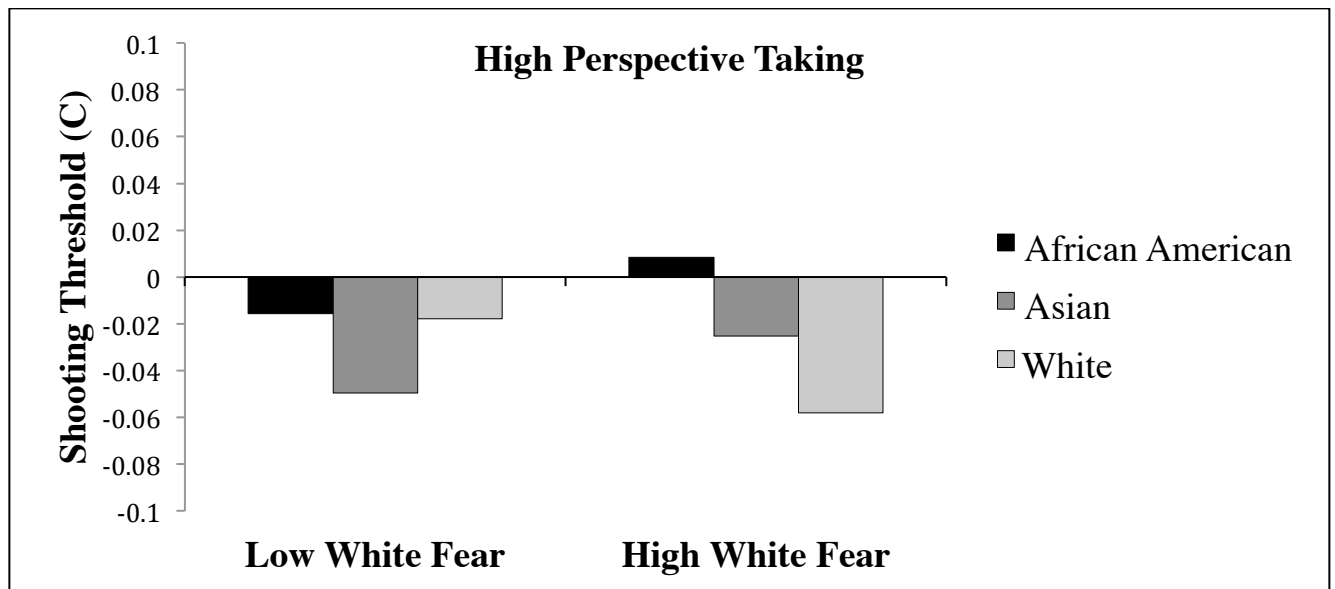


Figure 4. Shooting threshold by target race for low empathic concern participants

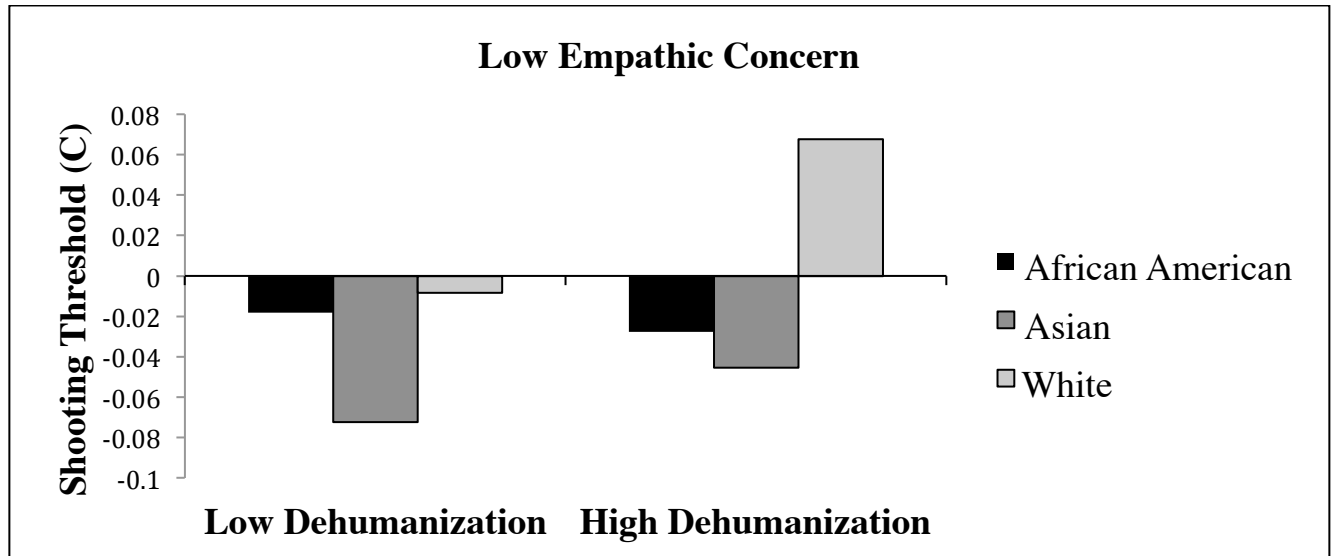
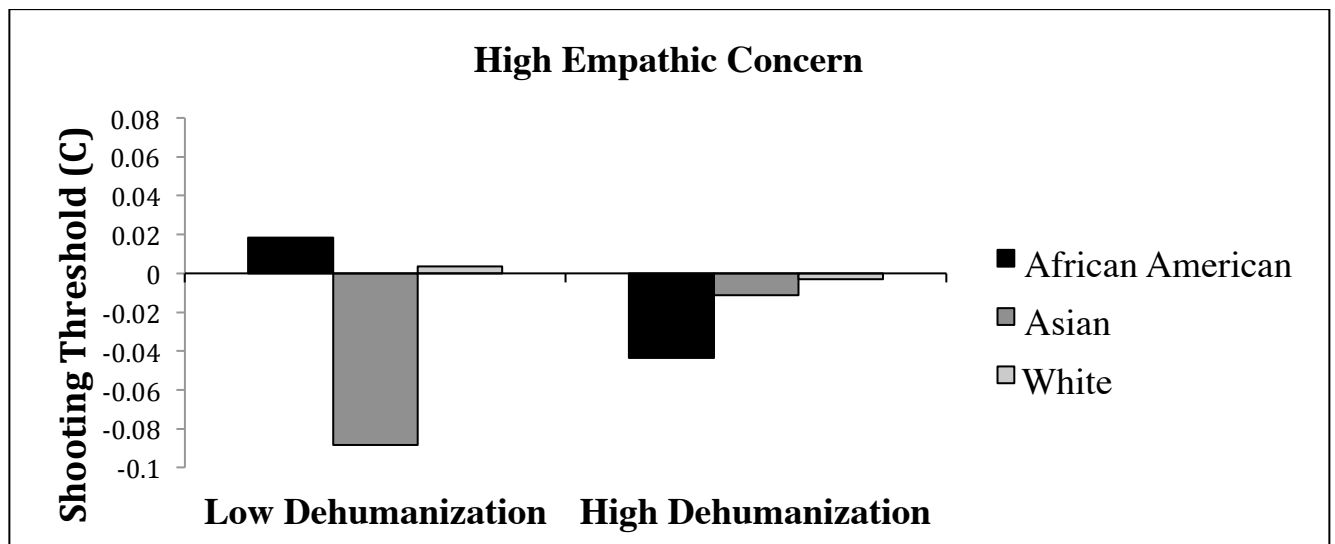


Figure 5. Shooting threshold by target race for high empathic concern participants



## CHAPTER 4

### DISCUSSION

#### 4.1 Interpretation of Results

The goal of this study was to test whether empathic ability moderated the relation between dehumanization and White fear, respectively, and shooting threshold for racial and ethnic minority targets. Our results demonstrated that the perspective taking aspect of empathic ability moderated the relation between White fear and shooting threshold, whereas for dehumanization, the empathic concern aspect of empathy moderated the relation. In both cases, individuals with low perspective taking or low empathic concern, and high White fear and high dehumanization, respectively, had the lowest shooting thresholds for Black relative to White targets. Interestingly, in both cases the shooting threshold for Black targets did not differ from that of Asian targets, suggesting that the effects indicate a general out-group bias, not just stereotypes about a specific group. It was also interesting that in both cases high levels of empathy essentially removed the racially based shooting bias, indicating that empathy may be a protective factor against the effects of out-group prejudice's effects on shooting decisions. These findings add to the literature on shooting decisions and help to identify and clarify how other individual difference variables contribute to shooting decisions.

Our first prediction was that empathy (perspective taking and/or empathic concern) would moderate the relation between White fear and shooting biases. Specifically, we predicted that high White fear and low empathy would be related to the most pernicious outcome (i.e. liberal shooting threshold for racial minorities). The first hypothesis was supported for only one facet of

empathic ability, perspective taking. The data suggested that individuals who score low on perspective taking and high on White fear have a more liberal threshold for shooting racial out-group members (Black and Asian American targets) relative to shooting in-group members (European American targets). There are two ways to interpret these results. On the one hand, it may be that White fear is facilitative of biases toward shooting out-group members and in the absence of perspective taking, White fear plays a large role in shoot decision. This makes sense given that individuals high in White fear may be more likely to see out-group members as a threat and thus, may have a lower threshold for deciding when to shoot them. On the other hand, the results may indicate that perspective taking is a protective factor, in that individuals with high White fear and high perspective taking did not differ in shooting thresholds for out-group members. Hence, perspective taking may block the effect of White Fear on shooting decisions. Future research using experimental manipulation of White fear and perspective taking is needed to fully understand these findings.

One explanation for why perspective taking – but not empathic concern – moderated the relation between White fear and shooting biases could be that the ability to take the perspective of others counteracts affective reactions toward racial minorities. In other words, though they might still fear racial minorities, the ability to see others' perspective may protect them from engaging in implicit racially prejudiced behavior. In the absence of empathy, then, fear may play a larger role in guiding shooting decisions. This is consistent with previous research demonstrating that perspective-taking only inhibits aggressive behavior when threat is low (Richardson et al., 2005). Other research suggests that perspective taking may reduce stereotype activation (Galinsky & Moskowitz, 2000). The basic idea here is that activation of another's perspective increases the likelihood of making situational (vs. dispositional) attributions that are

incompatible with stereotypes about racial minorities. This may then reduce a sense of threat or fear of minorities. This research is consistent with previous findings that show that intergroup contact prejudice interventions are less effective when participants perceive the out-group to be threatening (Tausch, Hewstone, Kenworthy, Cairns & Christ, 2007). Though empathy has been identified as an important mediator in effectiveness of inter-group contact interventions, this research suggests that directly targeting fear of minorities may provide some additional benefit. To target fear, interventions could potentially focus on decreasing mistrust of racial minorities. Thus, this significant interaction suggest that there may be multiple targets to focus on in interventions.

Our second hypothesis was that empathy (perspective taking and/or empathic concern) would moderate the relation between dehumanization and shooting biases. This hypothesis was partially supported for only one facet of empathic ability, empathic concern. We found that low empathic concern and high dehumanization of Blacks (relative to Whites) predicted more liberal shooting thresholds for Black and Asian targets relative to White targets. Similar to our White fear findings and contrary to our prediction, the shooting threshold did not differ between Asian and Black targets. This suggests that this effect is driven by a bias towards racial out-groups in general, rather than specific racial groups. Unexpectedly, low dehumanization and high empathy predicted the lowest shooting threshold for Asian targets relative to both Black and White targets. It is difficult to infer meaningful implications for these findings given that the dehumanization task was designed to assess dehumanization of Blacks and not Asians. Future studies that include measures specifically designed to assess dehumanization of Asians relative to Whites will be important in understanding these findings.

It is possible that only empathic concern emerged as a moderator for the relation between dehumanization and shooting biases because it is considered to be the more affective component of empathy, which is relevant to dehumanization. This is consistent with theory of dehumanization that defines the denial of humanness as reserving uniquely human emotions or characteristics to one's own group (characteristic of animalistic dehumanization vs. mechanistic dehumanization; Haslam & Loughnan, 2006). In other words, how would a White person experience the emotions of a racial minority member if he or she denies their experience of human emotion? Thus, empathic concern may protect individuals from dehumanizing racial out-groups by attributing unique human emotion across racial lines. Though others have documented a link between empathy and dehumanization (Čehajić et al., 2009) this study extends the literature by investigating a behavioral implication, shooting decisions. In the absence of the protection of empathic concern, dehumanization may play larger role in shooting decisions.

One important and somewhat unexpected finding from our study was that our main results suggest that the shooting bias may be a general out-group bias, not one largely driven by stereotypes about specific groups. Many of the previous shooting bias studies have only examined White and Black targets, making it difficult to draw conclusions about the nature of shooting biases. Our results, along with some other recent studies, have helped to clarify the nature of these shooting decisions. Our findings indicate that future studies should include other out-groups to determine which factors influence stereotypes and which influence the general out-group bias.

#### 4.2 Limitations and Future Directions



Despite these findings, this study had three important limitations. First, the study design was correlational, thereby not allowing for causal claims to be made. Future studies should utilize an experimental design to replicate these findings and further understand how empathy, dehumanization, and White fear play a role in shooting decisions. One example could be manipulating empathy by having participants read one of two vignettes designed to either induce or not induce empathy for Blacks and then engage in the shooting task. Another would be to manipulate dehumanization by having participants read one of two vignettes that are designed to dehumanize either the out-group or in-group, and then engage in the shooting task. Still, this study provided important groundwork for identifying important moderators in shooting tasks designed to assess shooting biases.

Second, the participants in this study all identified as White. It could be useful, in an effort to explore inter-group relations, to include participants of other races. Including racial minority participants can answer important questions about self-dehumanization and how it may affect attitudes toward one's own group. It could also identify whether this finding replicates when in-group and out-group members are switched, or whether the harmful effects of fear and dehumanization only apply to behavior of Whites toward racial minorities.

Third, the inability to replicate main effects of shooting biases suggests potential methodological issues. Though our task was based off stimuli used in studies that have been able to reproduce Correll et al. (2002)'s main effect findings, it is possible that our shooting task design contributed to the discrepant findings. More importantly, utilizing more ecologically valid tasks to understand how these moderators predict actual aggression toward racial minorities presents a fruitful challenge for future work. Though shooting biases are an acceptable proxy for

aggressive tendencies toward racial minorities, future work should utilize aggression paradigms that involve actually interacting with racial out-group members.

#### 4.3 Conclusion

Taken together, the present findings add to a growing body of literature examining a subtle but potentially lethal form of discrimination against racial minorities, shooting biases. This work contributes to the literature by identifying theory-driven mediators in shooting biases. These findings enhance our understanding of how affective mechanisms and implicit attitudes may affect racial shooting biases. Given growing concerns about the accidental shooting of unarmed people of color (Mays et al., 2013), understanding this particular behavior is especially important to maintaining basic human rights for racial minorities. Further understanding what factors predict these biases may help us develop more sophisticated interventions that aim to decrease aggression toward racial minorities.

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